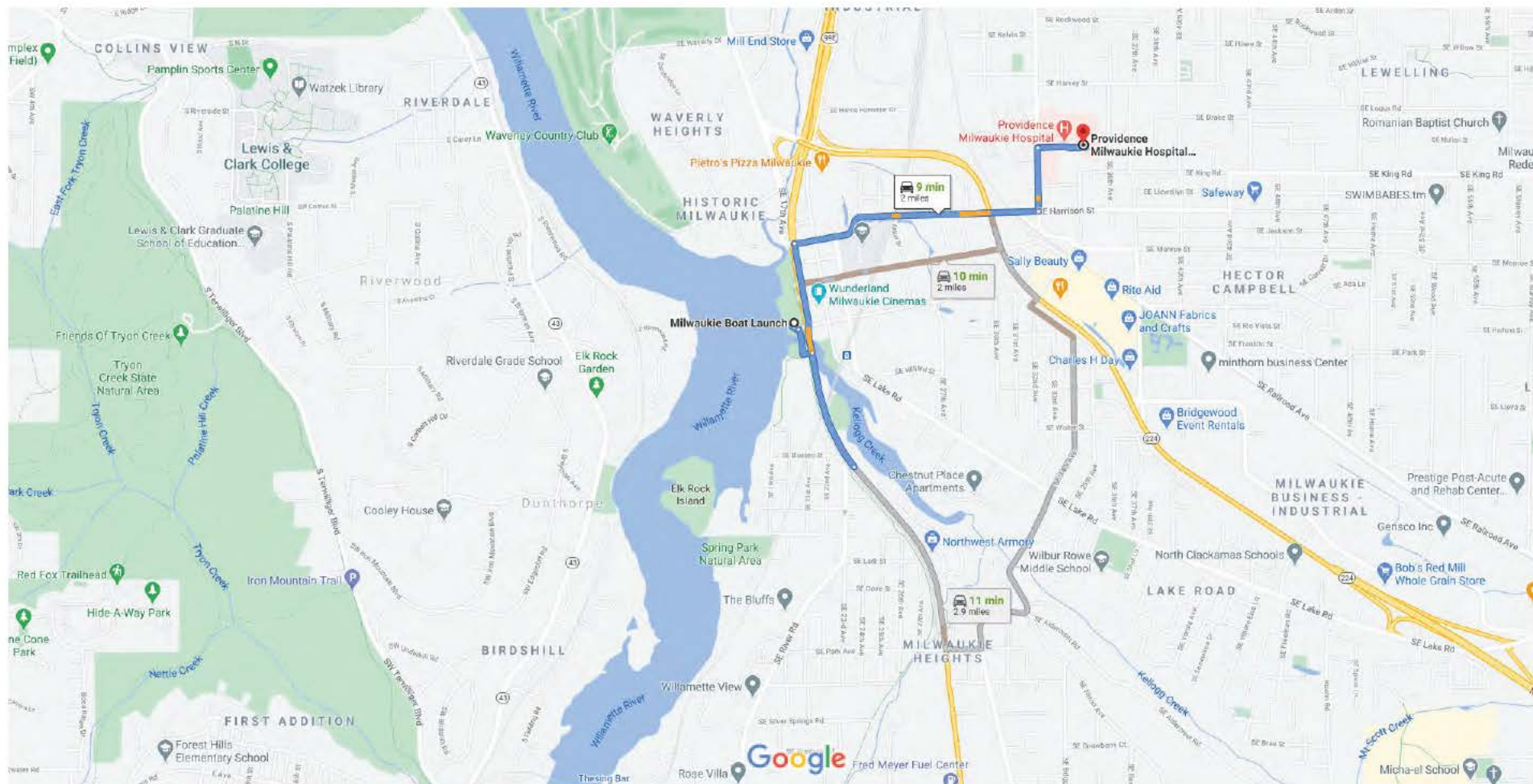




# Milwaukie Boat Launch, Milwaukie, OR to Providence Milwaukie Hospital Emergency Room

Drive 2.0 miles, 9 min



Map data ©2020 Google 1000 ft

## Milwaukie Boat Launch

Milwaukie, OR 97222

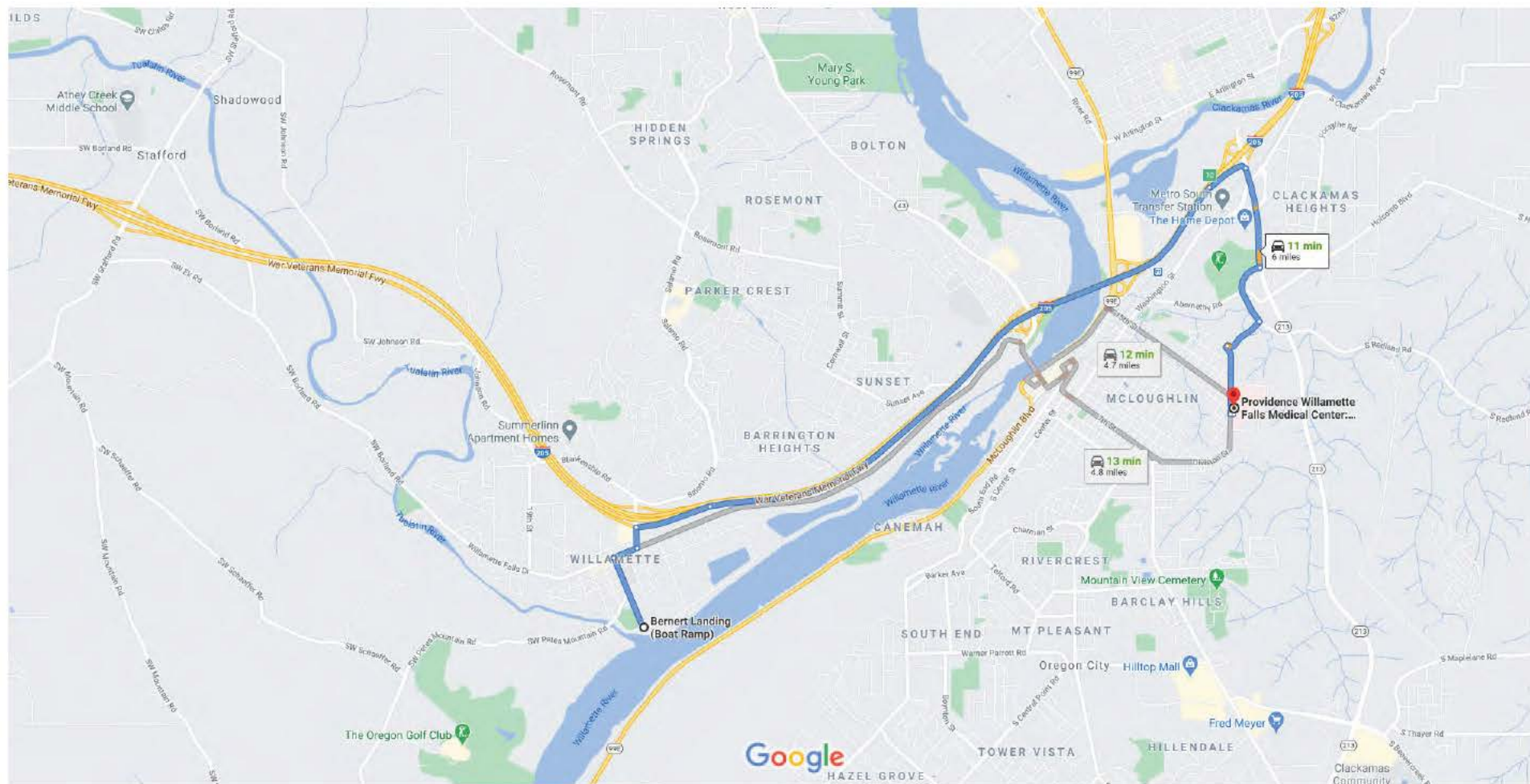
Take SE Washington St to SE McLoughlin Blvd

1 min (0.1 mi)



## Bernert Landing (Boat Ramp) to Providence Willamette Falls Medical Center: Emergency Room

Drive 6.0 miles, 11 min



Map data ©2020 Google 2000 ft

### Bernert Landing (Boat Ramp)

1905 Volpp St, West Linn, OR 97068

Get on I-205 N from 12th St

4 min (1.0 mi)

-  1. Head west on Volpp St toward 12th St  

---

13 ft
-  2. Turn right onto 12th St  

---

0.4 mi
-  3. Turn right onto Willamette Falls Dr  

---

0.1 mi
-  4. Turn left onto 10th St  

---

0.1 mi
-  5. Turn right to merge onto I-205 N toward Oregon City  

---

0.4 mi

Follow I-205 N to OR-213 S in Oregon City. Take exit 10 from I-205 N

- 
- 4 min (3.4 mi)
-  6. Merge onto I-205 N  


---

3.2 mi
  -  7. Take exit 10 to merge onto OR-213 S toward Oregon City/Molalla  


---

0.2 mi


Continue on OR-213 S to your destination

- 
- 4 min (1.5 mi)
-  8. Merge onto OR-213 S  


---

0.5 mi
  -  9. Turn right onto Redland Rd  


---

0.4 mi
  -  10. Turn right onto S Anchor Way  

---

0.2 mi
  -  11. Sharp left onto Division St  

---

0.4 mi
  -  12. Turn left  

---

79 ft

↩ 13. Turn left

 Destination will be on the right

131 ft

## Providence Willamette Falls Medical Center: Emergency Room

1500 Division St, Oregon City, OR 97045

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.




- 1. Head south toward SE McLoughlin Blvd  
131 ft
- 2. Turn right onto SE Washington St  
472 ft

Follow SE McLoughlin Blvd and SE Harrison St

- 3. Turn right onto SE McLoughlin Blvd  
0.3 mi
- 4. Make a U-turn  
0.6 mi
- 5. Turn right onto SE Harrison St  
0.7 mi
- 6. Turn left onto SE 32nd Ave  
0.2 mi

Drive to your destination

- 7. Turn right  
0.1 mi
- 8. Turn left  
 Destination will be on the right  
59 ft

## Providence Milwaukie Hospital Emergency Room

10150 SE 32nd Ave, Milwaukie, OR 97222

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

# HEALTH AND SAFETY PLAN

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## UPRIVER REACH BACKGROUND INVESTIGATION LOWER WILLAMETTE RIVER



*Prepared for*  
**OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY**  
PORTLAND, OREGON  
*December 11, 2020*  
*Project No. 0785.13.01*

*Prepared by*  
*Maul Foster & Alongi, Inc.*  
*3140 NE Broadway Avenue, Portland, OR 97232*

HEALTH AND SAFETY PLAN  
UPRIVER REACH BACKGROUND INVESTIGATION  
LOWER WILLAMETTE RIVER

*The material and data in this plan were prepared  
under the supervision and direction of the undersigned.*

MAUL FOSTER & ALONGI, INC.



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Joshua Elliott, PE  
Senior Engineer



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Meaghan Pollock, GIT  
Staff Geologist

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# 1 INTRODUCTION

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## 1.1 Plan Summary

This health and safety plan (HASP) was developed to describe the procedures and practices necessary for protecting the health and safety of Maul Foster & Alongi, Inc. (MFA) employees conducting activities consistent with the sediment sampling work plan (Work Plan), to which this HASP is an appendix. This HASP cover investigation activities being conducted in the Upriver Reach of the Willamette River (river mile [RM] 16.6 to 28.4) as described in the Work Plan (see Figure 1-1 in the Work Plan). Other employers, including MFA's subcontractors, are expected to develop and implement their own HASPs to manage the health and safety of their personnel.

MFA personnel conducting activities at the Upriver Reach are responsible for understanding and adhering to this HASP. Before fieldwork begins, a site safety officer (SSO) who is familiar with health and safety procedures and with the Upriver Reach will be designated by the project manager. The SSOs for this project are Ms. Carolyn Wise and Ms. Meaghan Pollock. Safety deficiencies should be immediately communicated to the SSO, project manager, and, if necessary, to MFA's health and safety coordinator (HSC).

MFA's subcontractor(s) have the primary responsibility for the safety of their own personnel in the Upriver Reach. All personnel conducting work in the Upriver Reach have "stop work" authority if they observe conditions that they believe create an imminent danger.

If MFA employees works in the Upriver Reach for more than a year, this HASP will be reviewed at least annually. The plan will be updated as necessary to ensure that it reflects the known hazards, conditions, and requirements associated with the Upriver Reach.

**MFA personnel who will be working in the Upriver Reach are required to read and understand this HASP. MFA personnel entering the work area must sign the Personnel Acknowledgment Sheet (Section 15), certifying that they have read and that they understand this HASP and agree to abide by it.**

## 2 NEAREST HOSPITAL/EMERGENCY MEDICAL CENTER

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### 2.1 Nearest Hospitals

Boat launches proximal to sampling locations will be used to access the Upriver Reach. Directions to the nearest hospitals from two of the primary boat launches are provided below.

**Providence Milwaukie Hospital**—When accessing Upriver from Milwaukie Boat Launch

10150 SE 32<sup>nd</sup> Avenue, Milwaukie, Oregon 97222

Phone: (503) 513-8311

Distance: 2.0 miles

Travel Time: approximately 9 minutes without traffic

**Providence Willamette Falls Medical Center**—When accessing Upriver Reach from Willamette Park/Bernert Landing Boat Ramp

1500 Division Street, Oregon City, Oregon 97045

Phone: (503) 656-1631

Distance: 6.0 miles

Travel Time: approximately 11 minutes without traffic

## 2.2 Route to Hospital from Upriver Reach

See figures at start of this document.

### 2.2.1 Driving Directions to Hospital from Upriver Reach

**Directions to Providence Milwaukie Hospital—When accessing Upriver Reach from Milwaukie Boat Launch**

1. Head south toward Southeast McLoughlin Boulevard (131 feet).
2. Turn right onto Southeast Washington Street (472 feet).
3. Turn right onto Southeast McLoughlin Boulevard (0.3 mile).
4. Make a U-turn (0.6 mile).
5. Turn right onto Southeast Harrison Street (0.7 mile).
6. Turn left onto Southeast 32<sup>nd</sup> Avenue (0.2 mile).
7. Arrive at Providence Milwaukie Hospital (on right).

**Directions to Providence Willamette Falls Medical Center—When accessing Upriver Reach from Willamette Park/Bernert Landing Boat Ramp**

1. Head west on Volpp Street toward 12<sup>th</sup> Street (13 feet).
2. Turn right onto 12th Street (0.4 mile).
3. Turn right onto Willamette Falls Drive (0.1 mile).
4. Turn left onto 10<sup>th</sup> Street (0.1 mile).
5. Turn right to merge onto I-205 North toward Oregon City (0.4 mile).
6. Merge onto I-205 North (3.2 miles).
7. Take exit 10 to merge onto OR-213 South toward Oregon City/Molalla (0.2 mile).
8. Merge onto OR-213 South (0.5 mile).
9. Turn right onto Redland Road (0.4 mile).
10. Turn right onto South Anchor Way (0.2 mile).
11. Sharp left onto Division Street (0.4 mile).
12. Turn left (79 feet).
13. Arrive at Providence Willamette Falls Medical Center Emergency Room (on right).

## 2.3 Emergency Phone Numbers

Ambulance, Police, Fire	Dial 911
<b>Ted Wall</b> Principal in Charge	Phone: (503) 501-5210 Cell: (b) (6)
<b>Michael Pickering</b> Program Manager	Phone: (971) 713-3585 Cell: (b) (6)
<b>Josh Elliott</b> Project Manager	Phone: (503) 501-5236 Cell: (b) (6)
<b>Phil Wiescher</b> Senior Technical Advisor	Phone: (360) 594-6267 Cell: (b) (6)
<b>Carolyn Wise</b> Field Coordinator/SSO	Phone: (360) 594-6255 Cell: (b) (6)
<b>Meaghan Pollock</b> Field Coordinator/SSO	Phone: (360) 947-2206 Cell: (b) (6)
<b>Cody Schweitzer</b> Field Personnel	Phone: (971) 254-8074 Cell: (b) (6)
<b>Emily Curtis</b> Health and Safety Coordinator	Phone: (503) 501-5233 Cell: (b) (6)
<b>Bill Beadie</b> Principal Industrial Hygienist	Phone: (360) 947-2200 Cell: (b) (6)

## 3 KEY PROJECT PERSONNEL

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Name	Responsibility
Ted Wall	Principal in Charge
Michael Pickering	Program Manager
Josh Elliott	Project Manager
Phil Wiescher	Senior Technical Advisor
Carolyn Wise	Field Coordinator/SSO
Meaghan Pollock	Field Coordinator/SSO
Cody Schweitzer	Field Personnel
Emily Curtis	Health and Safety Coordinator
Bill Beadie	Principal Industrial Hygienist

The PM should maintain regular contact with the HSC and field personnel and is responsible for coordinating with the Oregon Department of Environmental Quality (DEQ), the U.S. Environmental Protection Agency (EPA), subcontractors, and others, as necessary.

The SSOs are familiar with health and safety procedures and with the Upriver Reach. Field personnel are to report safety deficiencies to the SSOs and project manager. If the SSO is unable to answer health and safety related questions, the HSC will serve as the point of contact for the PM and field

staff regarding health and safety. The HSC verifies that field staff receive appropriate health and safety training, directs the selection and proper use of personal protective equipment (PPE), and potentially performs health and safety inspections in the field.

The field personnel are responsible for performing field operations. Field personnel report to the PM and coordinate with the HSC regarding health and safety matters. Field personnel are responsible for complying with this HASP.

## 4 UPRIVER REACH DESCRIPTION AND BACKGROUND

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### 4.1 Upriver Reach Description

The Upriver Reach of the Willamette River extends from RM 16.6 to 28.4 (from approximately the Sellwood Bridge to the confluence of the Tualatin and Willamette Rivers in West Linn, Oregon; see Figure 1-1).

### 4.2 Topography

Not applicable—the Upriver Reach is located in the water, off of the shoreline.

### 4.3 General Geologic/Hydrologic Setting

The Upriver Reach is located between RMs 16.6 and 28.4 of the lower Willamette River. Much of the river bottom consists of exposed basalt bedrock. Stronger river currents in the Upriver Reach appear to prevent sedimentation in much of the reach and, where sediment is observed, it is generally coarser than sediment farther downstream. In general, harder substrates are present between RMs 22 and 26, some sandy material is present between RMs 19 and 22, and silty sand to sandy silt is increasingly present between RMs 16.6 and 19.<sup>1</sup>

### 4.4 Upriver Reach Status

The Upriver Reach of the Willamette River flows through multiple municipalities and two counties. Land use is generally residential and mixed use residential or commercial.

### 4.5 General Upriver Reach History

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<sup>1</sup> DEQ. 2017. Work plan, Upriver Reach Sediment Characterization, Lower Willamette River, Portland, Oregon. Prepared for U.S. Environmental Protection Agency. Prepared by State of Oregon Department of Environmental Quality. October.



Industrial use in the Upriver Reach has included several municipal wastewater treatment plants, the Lake Oswego industrial area on the west bank between RMs 20.0 and 20.5, and two historical papermills on both the west and east bank at approximately RM 26.0. The papermaking facilities have operated since the late 1800's.

## 5 HAZARD EVALUATION

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### 5.1 Tasks and Operations

MFA has completed job hazard analyses (JHAs) for specific tasks that likely could be completed in the Upriver Reach, depending on the scope of work. These tasks are provided in Appendix A. The following list generally summarizes planned tasks and operations:

- General work near heavy equipment—field personnel will conduct work such as sediment sampling using a grab sampler, which will require working in close proximity to physical hazards associated with the sampling equipment.
- Collecting sediment samples—while potentially contaminated sediment is not expected to be encountered during this work, field personnel could come into contact with potentially contaminated sediment during sample collection.
- Working over water from boats and/or docks—much of the field work will include sediment sampling from a vessel. This will include onloading and offloading equipment onto the vessel and working in close proximity to other field personnel.

The control measures that field personnel must use to eliminate or minimize these hazards, such as air monitoring, PPE, and decontamination procedures, are detailed in the JHAs and in subsequent sections of this plan.

### 5.2 Upriver Reach Access

Project personnel will access the Upriver Reach from boat launches proximal to sampling locations and will notify DEQ and EPA before the start of field activities.

### 5.3 Chemical Hazard Evaluation

Field personnel are expected to wear personal protective equipment, as discussed in section 7.1, for protection against unanticipated chemicals.

### 5.4 Physical Hazards

The specific physical hazards and associated controls for work in the Upriver Reach are described in Appendix A, JHAs.

## 5.5 Electrical/Mechanical Systems

MFA employees will not be working on electrical or mechanical systems. The contractors using electrical or mechanical systems will be responsible for administering lockout/tagout procedures, as applicable.

## 5.6 Noise

In addition to interference with oral communication, job performance, and safety, the effects of noise on humans can be physiological, particularly temporary and permanent hearing loss. The factors that affect the degree and extent of hearing loss are intensity or loudness of the noise, type of noise, period of exposure, and distance from the noise source. Personnel should use hearing protection when working near operating equipment or other loud noise sources.

## 5.7 Heavy Equipment and Falling Loads

Working around heavy equipment presents physical hazards. Subcontractors may use heavy equipment such as overhead sediment power grab samplers. Be aware that a large turning radius and the height of the equipment create blind spots for the operators. Use of equipment also poses overhead hazards when materials are lifted. Do not stand near heavy equipment or below suspended loads. Other than the authorized equipment operators, personnel should be prohibited from riding in or on equipment. Be alert for inattentive equipment operators and make eye contact with equipment operators before approaching the work areas. Be aware of the potential for falling objects or loads.

To reduce the risks associated with heavy equipment, personnel working around the heavy equipment should wear a hard hat, steel-toed boots, eye protection, and, if needed, hearing protection.

## 5.8 Utility Clearance

Underground utilities are not anticipated to be encountered due to the shallow depths at which sediment samples will be collected. However, when intrusive activities are conducted, the threat of encountering underground utilities, such as electrical, gas, sewage, and unknown utility corridors, exists. Before the execution of an intrusive activity, a utility clearance should be completed and an assessment of the presence of underground utilities must be made. Check the proposed work areas for the presence of utilities. The utility clearance agency should be notified. The clearance reference number should be recorded and kept current. Before underground exploration begins, contact One Call Center at 1-800-332-2344 and, where appropriate, contact a private utility-locating company.

## 5.9 Inclement Weather

Field personnel should be equipped for the normal range of weather conditions. The designated MFA SSO should be aware of current weather conditions and the hazards that they may pose to the field crew. The SSO should observe the current weather conditions during the morning and afternoon hours and document them in the field notebook. The SSO should communicate potential inclement weather conditions to the field crew daily.

Heat, rain, cold, wind, snow, ice, and lightning are natural phenomena that complicate work activities and increase risk. The potential for physical hazards must be considered for tasks that expose personnel to inclement weather. Typical seasonal conditions must be taken into account during project planning. Subsections 5.9.1 through 5.9.4 discuss some hazards associated with inclement weather and provide potential control measures for those hazards.

### 5.9.1 Heavy Rain

In the event heavy downpours are forecasted or encountered, all operations will be suspended until the heavy rains end. Heavy downpours are defined as sustained precipitation events that cause a rapid increase in the discharge of the Willamette River and may obscure visibility. Personnel may remain on the vessel during heavy rain only when leaving poses greater danger. The vessel will remain in place and be secured with anchors. Should it be determined by the vessel operator that the weather conditions are worsening, field work will cease, and equipment will be secured prior to transporting field personnel to shore.

Field personnel should have rain gear and a change of dry clothes available on the vessel in the event of a heavy rain event.

### 5.9.2 Lightning

Thunderstorms are more likely to develop on spring and summer days but can occur year-round. Pay attention to the weather forecasts for the day and to early signs of thunderstorms, which can include high winds, dark clouds, and darkening skies. Lightning can strike as far as 10 miles from the area where it is raining. If you hear thunder, you could potentially be within striking distance. Seek safe shelter immediately.

Lightning tends to strike higher ground and prominent objects, especially materials that are good conductors of electricity, such as metal. A good place to be in a thunderstorm is in a safe building, i.e., one that is fully serviced and enclosed. Another source of shelter is an enclosed metal car, truck, or van with rubber tires. It is recommended that, when you are inside the vehicle during a lightning storm, you roll up the windows and sit with your hands in your lap, waiting out the storm. Don't touch part of the metal frame or wired devices in the vehicle (including the steering wheel and plugged-in cellular phones or other electronic devices).

If a safe building is not available, personnel can take shelter in low-lying areas such as valleys or ditches. If sheltering in low-lying areas, be aware of the potential for flooding. If you are caught in an area far from shelter and you feel your hair stand on end, lightning may be about to strike you. Crouch down on the balls of your feet immediately, with feet together; place your arms around your knees and bend forward. Be the smallest target possible and minimize your contact with the ground. Do not lie flat on the ground.

Lightning-strike victims do not carry an electrical charge and are safe to touch; do not be afraid to get them the urgent medical attention they need.

### 5.9.3 Cold Stress

Adverse climate conditions such as cold weather are important considerations in planning and conducting activities. Potential hazards in cold environments include trench foot, frostbite, and hypothermia, as well as slippery surfaces. The effects of low temperatures are exacerbated by the proximity of the river and surface waters.

When working in cold environments, take the following steps to lessen the chances of cold-related injuries:

- Protect exposed skin surfaces with appropriate clothing (such as face masks, hand wear, and footwear).
- Shield the work area with windbreaks to reduce the cooling effects of the wind.
- Have extra insulated clothing on hand.

The following are brief descriptions of common cold-related conditions and the treatment for each.

#### 5.9.3.1 Hypothermia

Hypothermia is an abnormal lowering of the core body temperature caused by exposure to a cold environment. When exposed to cold temperatures, the body begins to lose heat faster than it can be produced. The result is hypothermia. A body temperature that is too low affects the brain, making the victim unable to think clearly or move well. Wind chill, as well as wetness and water immersion, can play a significant role.

Typical early signs of hypothermia include shivering, fatigue, loss of coordination, confusion, and disorientation. Late symptoms of hypothermia include blue skin, no shivering, dilated pupils, slowed pulse and breathing, and loss of consciousness. Body temperatures below 90° Fahrenheit require immediate treatment to restore the temperatures to normal. The following steps can be taken to treat personnel with hypothermia:

- Alert the MFA SSO and request medical assistance.
- Move the victim into a warm room or shelter. If shelter is not available, jackets, a sleeping bag, blankets, and body heat from an individual can be used to help raise body temperature.
- Remove wet clothing.
- Warm the center of the body first—chest, neck, head, and groin, using skin-to-skin contact under loose, dry layers of blankets, clothing, towels, or sheets.
- If the victim does not respond, begin cardiopulmonary resuscitation.

#### 5.9.3.2 Frostbite

Frostbite is an injury caused by freezing. Frostbite causes a loss of feeling and color in the affected areas. It most often affects the nose, ears, cheeks, chin, fingers, and toes. Symptoms of frostbite include numbness; tingling or stinging; and bluish or pale, waxy skin.

The following steps can be taken to treat personnel with frostbite:

- Get into a warm area as soon as possible.
- Unless absolutely necessary, do not allow the person to walk on frostbitten feet.
- Do not rub or massage the frostbitten area; doing so may cause more damage.
- Do not use a heating pad or other heat source for warming. Affected areas are numb and can burn easily.

#### 5.9.3.3 Trench Foot

Trench foot is an injury to the feet resulting from prolonged exposure to wet and cold conditions. Trench foot can occur at temperatures as high as 60° Fahrenheit if the feet are constantly wet. Injury occurs because wet feet lose heat 25 times faster than dry feet. Personnel suffering from trench foot should remove boots and wet socks and then dry the feet. Avoid walking, as this may cause tissue damage.

### 5.9.4 Heat Stress

Heat stress is a significant potential hazard during summer months. An individual exhibiting signs of heat stress should be provided appropriate treatment immediately. Use of impermeable clothing reduces the cooling ability of the body because of evaporation reduction, which may lead to heat stress. In order to minimize the effects of heat stress, appropriate work-rest cycles should be maintained, and water or electrolyte-rich liquids should be available.

Never leave employees who are experiencing heat-related problems by themselves; if they do not respond quickly to cooling attempts, immediately call emergency medical services. If a worker is experiencing difficulty, do not hesitate to bring this to the attention of the supervisor or lead worker.

The following is a brief description of common heat-related conditions and the treatment for each.

#### 5.9.4.1 Heat Exhaustion

Signs and symptoms of heat exhaustion include headache, nausea, vertigo, and weakness. Seek prompt treatment such as cooling and rehydration. Workers suffering from heat exhaustion should be removed from the environment and provided fluids and adequate rest.

#### 5.9.4.2 Heat Stroke

The primary signs and symptoms of heat stroke are confusion and irrational behavior; loss of consciousness; hot, dry skin; and abnormally high body temperature. For a worker exhibiting heat stroke symptoms, professional medical treatment should be obtained immediately, as the body has

lost its ability to cool itself. The worker should be placed in a cool area and the outer clothing should be removed. The worker's skin should be cooled to the extent possible until emergency workers arrive.

## 5.10 Biological Hazards

There is a potential for workers to come in contact with biological hazards such as bloodborne pathogens, animals, insects, and plants, as well as persons potentially infected with the novel coronavirus disease 2019 (COVID-19). Some personnel may be sensitive to certain hazards because of allergies or other reasons. Known allergies should be reported to the SSO and HSC before work is conducted.

The following are potential biological hazards and the control measures for each of the hazards.

### 5.10.1 Bloodborne Pathogens

Bloodborne pathogens enter the body and circulation system through cuts, abrasions, or punctures of the skin or mucous membranes and are not transmitted through ingestion, inhalation, or contact with the skin. Blood and/ or human waste (i.e., sewage), if encountered, should be treated as if infectious and all skin and mucous membranes should be considered a point of entry for pathogens. To reduce the risk of contracting bloodborne pathogens, field personnel should take the following precautions:

- Wear chemical resistant gloves when handling sediment and/or equipment that has come in contact with Willamette River water.
- Avoid contact with blood and other bodily fluids.
- Use personal protective equipment with giving first aid or CPR, such as disposable gloves and breathing barriers.
- Wash hands with soap and water immediately following care.

The SSO should be notified of any potential contact with blood or bodily fluids resulting from CPR or first aid administered.

### 5.10.2 Stinging Insects

Bees and other stinging insects may be encountered in a work area and should be avoided. Stinging insects include bees, wasps, and hornets. If a worker is stung by a bee, wasp, or hornet, the following steps can be taken:

- Have someone stay with the worker to be sure that he or she does not have an allergic reaction. Seek medical attention if a reaction develops. Those who have known allergies to stings or bites should carry the appropriate physician-prescribed epinephrine device and notify the SSO and other field personnel of their allergies prior to beginning field work.
- Wash the site of the sting with soap and water.
- Remove the stinger by wiping gauze over the area or scraping a fingernail over the area. Never squeeze the stinger or use tweezers.



- Apply ice to reduce swelling.

Diphenhydramine (e.g., Benadryl®) for allergic reactions should be included in field first-aid kits and may be taken at the discretion of the individual.

### 5.10.3 COVID-19

The novel coronavirus disease 2019 (COVID-19) is a respiratory illness that can spread from person to person. The SARS-CoV-2 virus, which causes COVID-19, is thought to spread primarily between and among people who are in close contact with one another (within approximately 6 feet) through respiratory droplets produced when an infected person coughs or sneezes. Activities conducted on the vessel will require working in close proximity to other personnel. Personnel are expected to wear facial coverings at all times and practice social distancing to the extent practicable. When social distancing cannot be maintained, field personnel are required to wear a disposable N95 mask or respirator with N95 cartridge. If respirators are used, they should be cleaned and disinfected between uses with EPA-registered cleaners for COVID-19.

If field personnel develop symptoms consistent with COVID-19, the boat will immediately return to the boat launch and vessel operations will cease. All crew members will self-isolate and will not return to work until authorized by HR. The boat will not re-launch until it is fully disinfected. A replacement crew will be staffed, if necessary. Additional information is provided in the COVID-19 exposure control, mitigation, and recovery plan included as an addendum to this HASP.

## 5.11 Boating Safety

Field personnel will be conducting the majority of field work from an overwater vessel. There are inherent risks associated with preparing for and conducting overwater work.

### 5.11.1 Vessel Transportation and Loading/Offloading

The chosen subcontractor shall have the proper licensure to transport the trailered vessel to and from the boat launch. Caution will be used by the chosen subcontractor when offloading the vessel from the trailer and the area will be cleared of all non-essential personnel. Personnel will be made aware of potential pinch points during loading/offloading and equipment assembly and should keep hands free of these areas. All means of vessel access shall be properly secured, guarded, and maintained free of slipping and tripping hazards, to the extent practicable.

### 5.11.2 Working in or near Water

Working in or near water can present and magnify hazards that pose a drowning risk, as well as danger from inclement weather, cold stress, and exposure to contaminants. Swift-moving streams can be dangerous to personnel. Caution should be used when streambeds or stream banks are composed of loose or slippery material such as rocks or mud. Algae can make these materials even slipperier. Sample collection within the Upriver Reach is expected to be conducted entirely from a vessel. Aside from Willamette Falls, the Upriver Reach is relatively quiescent (no whitewater). River stage and discharge

are influenced both by flow from upstream and water level in the Columbia River downstream. The Upriver Reach is used extensively by recreational boaters. The vessel captain will be aware of surrounding vessel traffic at all times to avoid a collision. The vessel captain will also be aware of potentially strong currents and navigational hazards (free floating logs, debris, navigational buoys).

When working near water, each worker should be aware of his or her surroundings and the weather conditions (check local weather reports before beginning work near or in water) and plan adequate escape routes where necessary. Work with unobstructed access to water should include the following:

- Personnel should use the buddy system.
- A personal flotation device should be worn at all times when working over or near water.
- Swimming should be prohibited for personnel unless it is necessary to prevent injury or loss of life.
- Because of the prevalence of waterborne organisms, such as coliform bacteria and giardia, individuals should not drink directly from streams.

### 5.11.3 Working on the Vessel

There are unique hazards associated with overwater work. Field personnel are to comply with Oregon State boating laws and the chosen subcontractor's guidelines while on the vessel. The vessel will be operated only by those personnel who have successfully completed the required boating safety and licensing course. Hazards are described below.

**Slips, Trips, and Falls**—Working on wet surfaces in boats can lead to difficult footing and overall balance. Vessel crews and field personnel shall keep the working area free of unnecessary obstacles and periodically remove any accumulated sediment or mud from the working surface.

**COVID-19**—Activities conducted on the vessel will require working in close proximity to other personnel. When social distancing cannot be maintained (i.e., 6 feet of distance), field personnel are required to wear a disposable N95 mask or respirator with N95 cartridge. If respirators are used, they should be cleaned and disinfected between uses with EPA-registered cleaners for COVID-19.

**Vessel Fueling**—The chosen subcontractor will ensure the vessel has sufficient fuel prior to beginning work each day. To the extent possible, fueling will occur on land and will comply with all applicable regulations and guidelines. If fueling must occur overwater, the vessel will be fueled at an authorized overwater marine fueling facility. Small quantities of fuel kept on board will be stored in safety-approved storage containers away from the engine in an area of good ventilation. Onboard fueling is prohibited except in emergency situations.

## 6 HEALTH AND SAFETY TRAINING

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MFA personnel working in the Upriver Reach and who could be exposed to chemicals of potential concern will have completed training consistent with the Hazardous Waste Operations and Emergency Response requirements in 29 Code of Federal Regulations (CFR) 1910.120(e). The training will include:

- Identity of safety and health personnel
- Safety and health hazards identified in the Upriver Reach
- Proper use of required PPE
- Safe work practices required in the Upriver Reach, e.g., fall protection, confined space entry procedures, hot work permits, general safety rules
- Safe use of engineering controls and equipment in the Upriver Reach
- Medical surveillance requirements, including the recognition of signs and symptoms that might indicate overexposure to hazards
- The emergency response plan/spill containment plan

The HSC will oversee training for personnel. Training records, including an outline, signoffs, and competency records, will be maintained by the HSC.

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## 7 SAFETY EQUIPMENT

### 7.1 Personal Protective Equipment

PPE must be worn by individuals to protect against physical hazards. PPE required is modified Level D, which consists of:

- United States Coast Guard–approved personal floatation device, such as a life jacket
- Type 1 hard hat
- High-visibility vest
- Chemical-resistant, steel toe and shank work boots made of rubber or nylon to enable decontamination following work in the exclusion zone
- Safety glasses with side shields compliant with ANSI Z87.1
- Nitrile gloves or equivalent when handling known or potentially impacted media
- Hearing protection (during high-noise tasks)
- Work gloves (if handling materials that might have sharp edges, protrusions, or splinters)

Field personnel are also required to wear facial coverings at all times, except for brief periods to eat or drink. When social distancing cannot be maintained (i.e., 6 feet of distance), field personnel are required to wear a disposable N95 mask or respirator with N95 cartridge. If respirators are used, they should be cleaned and disinfected between uses with EPA-registered cleaners for COVID-19.

Additional PPE may be necessary for specific tasks with additional hazards. The SSO will be responsible for designating additional PPE for specific tasks. Depending on the activity, additional PPE may include:

- Chemical-resistant clothing, e.g., Tyvek® coveralls
- Chemical-resistant goggles
- Chemical-resistant gloves
- Face shield
- Respiratory protection

Additional PPE may be required if workers discover unexpected contamination. Characteristics of unexpected contamination could include unusual odors, discolored media, a visible sheen, etc. The SSO and, if necessary, the HSC will be contacted as soon as possible after the discovery of unexpected contamination, and the SSO and/or the HSC will determine the need for additional controls and/or training.

PPE must meet the requirements of recognized consensus standards (e.g., American National Standards Institute, National Institute for Occupational Safety and Health), and respiratory protection shall comply with the requirements set forth in 29 CFR 1910.134.

**Project personnel are not permitted to reduce the level of specified PPE without approval from the SSO or the HSC.**

## 7.2 Safety Equipment

The SSO will be responsible for ensuring that the following safety equipment is readily available and is properly inspected daily and maintained.

- Soap and water for decontamination
- First-aid kit
- Fire extinguisher
- Fluids for hydration, e.g., drinking water or sports drink
- Automated external defibrillator (AED)
- Portable handwashing station or hand sanitizer

In addition, the AED will be checked for a flashing hourglass/absence of the low battery alarm on a daily basis, and procedures for use will be available.

## 7.3 Communications Equipment

MFA personnel should have a mobile phone available in case of emergency.

## 8 DECONTAMINATION PROCEDURES

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### 8.1 Partial Decontamination Procedure

MFA employees will implement the following partial decontamination procedures when exiting the sampling vessel but remaining in the Upriver Reach:

- Wash and rinse boots and outer gloves (if worn) in containers in the contamination-reduction zone.
- Inspect Tyvek® suit (if worn) for stains, rips, or tears. If suit is contaminated and is to be used again, full decontamination will be performed as described in Section 8.2. If the suit is damaged, it should not be reused.
- Remove outer gloves (if worn). Inspect and discard in a container labeled for disposable items if ripped or damaged.
- Remove respirator, if worn, and clean with premoistened alcohol wipes. Discard used cartridges at the frequency dictated by the SSO.
- Wash hands and face with soap and water.

### 8.2 Full Decontamination Procedures

MFA employees will follow the full decontamination procedures listed below when exiting the exclusion zone and leaving the Upriver Reach, e.g., at the end of the work shift.

- Wash and rinse boots and outer gloves (if worn) in containers in the contamination-reduction zone.
- Remove outer gloves and Tyvek® suit (if worn) and deposit in a container labeled for disposable items.
- Remove respirator (if worn) and discard used cartridges at the frequency dictated by the SSO.
- Wash and rinse respirator (if worn) in a “respirators only” decontamination container.
- Remove work boots and put on street shoes. Place work boots in a plastic bag or container for later reuse.
- Remove inner gloves and deposit in a container labeled for disposable items.

- Wash hands and face with soap and water.
- Shower as soon after the work shift as practicable.

### 8.3 Equipment Decontamination Procedures

Sample equipment decontamination procedures should be followed after equipment use at each sample location and could include the following:

- Initial rinse with vessel river water to dislodge particles
- Monophosphate detergent wash, consisting of a dilute measure of Liqui-Nox or other phosphate-free detergent
- Distilled water rinse

Additional rinses with methanol are not anticipated but may be considered based on sample conditions (e.g., excessive oily/tar residue).

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## 9 MEDICAL SURVEILLANCE

MFA will ensure that its employees who meet the following criteria are enrolled in a medical surveillance program consistent with 29 CFR 1910.120(f):

- The employees are, or may be, exposed to hazardous substances or health hazards at or above established permissible exposure limits for 30 or more days per year.
- The employees are required to wear a respirator for 30 or more days per year.

MFA employees who exhibit signs or symptoms consistent with overexposure to contaminants will be offered medical surveillance consistent with Oregon Administrative Rule 1910.120(f)(iii).

MFA will ensure that its employees who are authorized to wear respirators are medically evaluated consistent with the respiratory protection standard (29 CFR 1910.134). The HSC or administrative designee (e.g., human resources manager) will maintain medical evaluation records.

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## 10 CONTROL MEASURES

Access to the Upriver Reach will be controlled as part of preparatory activities. Control measures may include limiting sampling vessel access to everyone except authorized personnel.



MFA requires the “buddy system” if personnel conduct operations that may involve exposure to hazards. The buddy system may involve working with non-MFA personnel.

# 11

## EMERGENCY RESPONSE / SPILL CONTAINMENT / CONFINED SPACE

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### 11.1 Spill Prevention, Containment, and Countermeasure

In the event of a release, information on the Spill Notification Form provided in Appendix B must be known at the time of notification or be in the process of being collected. Do not delay spill notification to collect the information. Information must be documented using the Spill Notification form (see Appendix B). This form should be submitted to the DEQ or the EPA only by the responsible contractor. MFA or its contractors can use this form or their own form.

#### 11.1.1 Responsibilities for Spill Prevention, Response, and Notification

Contractors and subcontractors are responsible for providing spill management training, spill prevention, and response equipment, and for adhering to the planning and work procedures described in their site-specific plans. Should a release occur, contractors will be responsible for arranging cleanup that is outside their capabilities and for the proper regulators. Contractors have responsibility for notifying DEQ at the time of release and for reporting spills of reportable quantities to regulators.

#### 11.1.2 Personnel Communications

During the first day of fieldwork and as conditions or activities change, contractor personnel should discuss best management practices related to spill prevention and surface water quality protection.

#### 11.1.3 Potential Spill Sources

Potential spill sources may include but are not limited to:

- Oil-filled operating equipment (hydraulic units, pumps, generators, etc.)
- Vessel and equipment leaks or tank punctures
- Fluids from decontamination processes

Potential spill sources will be evaluated for the type and amount of material handled or used.

#### 11.1.4 Inspection/Preventative Maintenance

Inspections and preventative maintenance should be performed to minimize the potential for a spill. Each contractor should be equipped to manage spills from their equipment. For example:

- The vessel operator should inspect their units at the beginning and end of each day for leaks, potential leaks, and improper operations that could lead to system failure.
- The responsible contractor should inspect spill response kits/equipment weekly or after use and restock, as necessary.

### 11.1.5 Spill Response

Upon discovery of a spill, stop and evaluate the hazards:

- Try to identify the hazardous substance(s) spilled.
- Identify the source and estimate the quantity of material(s) spilled.
- Evaluate toxic hazards (e.g., vapors); explosive hazards; environmental hazards; and other hazards.
- Document observations pertaining to the spill.

If it can be done safely, try to keep the situation from worsening by stopping the source of the discharge. This may involve:

- Shutting off equipment or pumps
- Plugging holes in operating equipment or tanks
- Closing valves
- Righting an overturned container or piece of operating equipment
- Taking care of injured personnel
- Notifying the MFA SSO

Isolate the spill from human and vehicular contact. Methods include:

- Cones
- Stanchions and barricade tape
- Signs

**DO NOT ENTER THE AREA OF THE SPILL UNLESS FULLY PROTECTED WITH THE PROPER PPE.**

If it can be done safely, contain the release by using one of the following techniques:

- For relatively small spills, apply absorbent to the surface of the spill and reapply until there is enough to absorb the liquid.
- If the discharge has reached or is likely to reach surface waters, call for the assistance of a cleanup firm, that can deploy booms, sorbent booms, or underflow dams. The chosen

subcontractor will have oil-absorbent booms on board the vessel and will deploy the booms prior to the arrival of a spill response contractor, if possible.

- If the spill threatens personnel, alert the personnel to evacuate the area.

Assess the potential for fires, explosions, or additional spills and take appropriate actions:

- Stop processes or operations where necessary.
- Isolate affected containers or equipment.
- Remove unaffected, potentially hazardous materials.

If able to do safely, clean up small spills using the following steps:

- Try to contain the free-flowing liquids with the proper absorbent compound for the specific substance(s) spilled.
- Sweep up, shovel, or otherwise remove the absorbent compound and place the material in an appropriately labeled container.
- Spread a second application of the absorbent compound over the spill area(s).
- Allow a few minutes for material absorption and then remove and place in an appropriately labeled container.
- Place contaminated materials (booms, absorbent pads, etc.) used in the spill cleanup into approved, properly labeled containers for disposal.

For large spills or spills in surface water, the responsible contractor will obtain assistance from a cleanup company. The responsible contractor will handle the cleanup and reporting to DEQ and MFA. The DEQ and MFA will determine when a cleanup is complete. Depending on the nature and magnitude of the spill, this decision may be made in conjunction with the EPA.

After completion of the cleanup, protective clothing should be removed by cleanup personnel and placed in an appropriately labeled, approved waste container for disposal. Gloves should be removed, and hands should be cleaned thoroughly with waterless hand cleaner or soap and water and wiped with rags and/or paper towels. Rags and other waste materials should also be placed in appropriately labeled, approved waste containers for disposal.

#### 11.1.6 Notification and Reporting for Spills and Incidents

The responsible contractor will communicate current information to the MFA project manager. The contractor's spill prevention plan/HASP must identify the individual(s) responsible for communication with MFA and with agencies regarding reportable spills, as appropriate.

Contractor representatives must be available 24 hours a day and on weekends and holidays. The contractor representatives will then enlist support personnel as needed. Major oil spills must be immediately reported to the contractor representatives so that a determination may be made regarding

notification of authorities. Depending on the spill, the contractor shall take action in one or more of the following scenarios:

- Oil spills to navigable waters or adjoining shorelines that cause a sheen on the water surface or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines must be reported immediately upon discovery (within one hour) to the National Response Center, 1-800-424-8802.
- Aboveground spills of petroleum that cause a sheen on nearby surface water must be reported immediately. To report a petroleum release during regular business hours, contact the Oregon Emergency Response System at 1-800-452-0311.
- Notify the local emergency response agency of a spill of a hazardous substance. Notification may be through the local dispatch authorities at 1-503-229-6931 or 1-503-229-5153, or through the Oregon Emergency Response System, 1-800-452-0311, who will notify the local authority. The person making the notification should be prepared to provide his or her name, address, and telephone number and a location and telephone number where he or she can be reached for the duration of the incident.

#### 11.1.7 Emergency Responders

Other incidents (e.g., injury, property damage, vehicular accident, near miss) will be documented on the incident report form included with Appendix C.

The responsible contractor's spill prevention plan/HASP must identify the emergency response contractors who will provide requested additional resources.

#### 11.1.8 Spill Response Equipment and Waste Disposal

Spill response equipment will be clearly labeled and stored near oil or hazardous material storage and use areas and/or critical stormwater transport or discharge locations.

Spill response equipment will be sized to effectively contain the volume of oil or hazardous materials that could be discharged, and may contain one or more of the following:

- Oil-absorbent booms, pillows, pads, or granules
- Drain seals/plugs/mats
- Containers for collecting wastes from a spill
- PPE (nitrile and/or neoprene gloves, face masks, etc.)

Impacted soil or other media and wastes resulting from a spill response will be containerized appropriately, characterized for disposal by the responsible contractor, and removed by a licensed waste hauler.

### 11.2 Confined Space

MFA does not anticipate MFA personnel performing activities inside of confined spaces.

A confined space is large enough and so configured that an employee can fully enter the space and work, has limited or restricted entry or exit (e.g., tanks, vessels, silos, storage bins, hoppers, vaults, and pits), and is not designed for continuous human occupancy. A confined space can be a permit-required confined space if it contains acute hazards, such as a potentially hazardous atmosphere and engulfing hazard.

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## 12 PRE-ENTRY BRIEFING

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MFA employees will conduct pre-entry briefings, e.g., tailgate meetings, before starting work in the Upriver Reach and/or as the scope of work changes throughout the project to ensure that employees are familiar with the HASP and that the plan is being followed. Attendance and discussion topics will be documented on sign-in sheets, which will be maintained by the SSO. A tailgate safety meeting checklist is provided in Appendix D.

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## 13 PERIODIC EVALUATION

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The project manager or designee will evaluate the effectiveness of this HASP. As part of the evaluation, the project manager or designee will track ongoing health and safety feedback from field personnel working on the project. This feedback will be reviewed and incorporated into either immediate or annual updates of the HASP. HASPs will be reviewed and updated at least annually. Updating the plan as necessary ensures that it reflects the known hazards, conditions, and requirements associated with the Upriver Reach. MFA will maintain periodic evaluation records and will track all HASP revisions.

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## 14 SAFE WORK PRACTICES

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The following safe work practices are provided to supplement the other information included with this HASP:

1. Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of materials is prohibited in areas with potentially contaminated materials.
2. Field personnel will, whenever practicable, remain upwind of drilling rigs, open excavations, and other ground-disturbing activities.

3. Subsurface work shall not be performed at any location until a utility clearance has been completed and the area has been confirmed to be free of underground utilities or other obstructions.
4. Contaminated protective equipment shall not be removed from the work area until it has been properly decontaminated or containerized.
5. Personnel should be cautioned to inform one another of subjective symptoms of chemical exposure such as headache, dizziness, nausea, and irritation of the respiratory tract.
6. Field personnel are to be briefed on the anticipated hazards, equipment requirements, safety practices, emergency procedures, and communications methods, both initially (tailgate meeting) and in daily briefings.
7. Field vehicles and the research vessel shall contain a first-aid kit and a multipurpose, portable fire extinguisher.

## 15 ACKNOWLEDGMENT

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MFA cannot guarantee the health or safety of any person working in the Upriver Reach. Because of the potentially hazardous nature of visits to active investigation areas, it is not possible to discover, evaluate, and provide protection against all possible hazards that may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury and illness. The health and safety guidelines in this plan were prepared specifically for the Upriver Reach and should not be used on any other site without prior evaluation by trained health and safety personnel.

MFA personnel who will work in the Upriver Reach are to read, understand, and agree to comply with the specific practices and guidelines described in this HASP regarding field safety and health hazards.

This HASP has been developed for the exclusive use of MFA personnel. MFA may make this plan available for review by contracted or subcontracted personnel for information only. This plan does not cover the activities performed by employees of any other employer in the Upriver Reach. All contracted or subcontracted personnel are responsible for implementing their own health and safety program, including generating and using their own plan.

I have read and I understand this HASP and all attachments, and agree to comply with the requirements described herein:

Name	Title	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Name	Title	Date

# APPENDIX A

## JOB HAZARD ANALYSES





## Job Hazard Analysis (JHA)

Task/Operation: Sediment Sampling		
<b>Project Number:</b> 0785.13.01	<b>Location/Site where Task/Operation Performed:</b> Willamette River Mile 16.6 to 28.4 Upriver Reach, Oregon	
<b>Date Prepared:</b> 12/7/2020	<b>Employee Preparing this JHA:</b> Meaghan Pollock	
<b>Date Reviewed:</b> 12/11/2020	<b>Employee Reviewing and Certifying this JHA:</b> Josh Elliott	
Job/Task Description		
Employees will conduct work such as sediment sampling from a boat.		
Physical Hazards		
Physical Hazard/Risk	Source of Hazard/Risk	Hazard/Risk Mitigation
Eye injury	Construction debris (e.g., soil) coming into contact with eyes.	Wear eye protection compliant with ANSI Z87.1
Injuries caused by improper lifting	Equipment, core sampler, sample coolers.	Use proper bending/lifting techniques by bending and lifting with legs and not with back. Do not twist at the waist when turning the core sampler. Use buddy system for heavy objects.
Accidents with equipment/tools	Sample collection equipment/tools.	Verify you have the appropriate equipment/tools for tasks. Use equipment/tools only as intended by the manufacturer. Stow all tools in vehicle properly; use appropriate cases and bags. Secure equipment in boat with netting or straps—do not leave loose.
Biological/Chemical Hazards		
Biological/Chemical Risk	Source of Hazard/Risk	Hazard/Risk Mitigation
Chemical	Personnel performing tasks may come into direct contact with contaminated materials in sediment.	If necessary, see Chemical Hazards Summary Table for applicable chemical hazards.
Additional Control Measures and Guidance		
<b>Engineering Controls:</b> No engineering controls specified.		
<b>General Safe-Work Practices and Guidance:</b> <ul style="list-style-type: none"> <li>Triple-rinse sampling equipment using distilled or deionized water and alconox for first rinse, and distilled water for second and third rinses.</li> <li>Always clean materials between locations at the site to avoid cross-contamination.</li> <li>Do not take equipment from the site without first properly decontaminating said equipment.</li> <li>Sampling in boat—see JHA for working over water from boats.</li> </ul>		
<b>Personal Protective Equipment:</b> Hard hat, work boots, high-visibility vest, United States Coast Guard–approved personal floatation device such as a life jacket, safety glasses with side shields, nitrile gloves, and hearing protection if sampling using a drill-rig or around heavy equipment.		

## Job Hazard Analysis (JHA)

Task/Operation: Working Near Heavy Equipment		
<b>Project Number:</b> 0785.13.01	<b>Location/Site where Task/Operation Performed:</b> Willamette River Mile 16.6 to 28.4 Upriver Reach, Oregon	
<b>Date Prepared:</b> 12/7/2020	<b>Employee Preparing this JHA:</b> Meaghan Pollock	
<b>Date Reviewed:</b> 10/26/2020	<b>Employee Reviewing and Certifying this JHA:</b> Phil Wiescher	
Job/Task Description		
Employees will conduct work, such as sediment sampling, using a grab sampler. This will require working in close proximity to physical hazards associated with the sampling equipment.		
Physical Hazards		
Hazard/Risk	Source of Hazard/Risk	Hazard/Risk Mitigation
Heat/cold/sunburn	Weather.	Wear sunscreen on exposed skin. Stop work and move to a shaded area to drink water if there are symptoms of heat stress.  During cold conditions, wear adequate clothing to reduce the potential for hypothermia.
Bodily harm or death	Heavy equipment operating on site creates a potential for site workers to be struck, crushed, or impacted by moving parts.	Stay a safe distance from equipment and maintain eye contact with equipment operators. Wear a safety vest for enhanced visibility. Field personnel will avoid standing beneath suspended loads.
Eye injury	Construction debris (e.g., soil) coming into contact with eyes.	Wear eye protection compliant with ANSI Z87.1
Head injury	Heavy equipment and/or tools impacting the head.	Wear a hard hat.
Penetration of feet	Sharp objects that could be stepped on; large objects falling on feet.	Wear steel-toe boots with steel shank.
Hearing loss	Noise generated by heavy equipment/machinery.	Wear hearing protection such as ear plugs or ear muffs.
Hand injury	Pinch points.	Wear protective gloves whenever possible. Avoid placing hands near operating equipment.
Biological and Chemical Hazards		
Hazard/Risk	Source of Hazard/Risk	Hazard/Risk Mitigation
Site contaminants	Field personnel will be performing tasks that may cause them to come into direct contact with contaminated materials in sediment.	Always handle materials with nitrile gloves. If necessary, see Chemical Hazards Summary Table for applicable chemical hazards.
Additional Control Measures and Guidance		
<b>Engineering Controls:</b> No engineering controls specified.		



Task/Operation: Working Near Heavy Equipment
<p><b>General Safe-Work Practices and Guidance:</b> Personnel should stay upwind and out of the impact area of the heavy equipment, if feasible. Work conducted in the impact area must be coordinated with the equipment operator using pre-established methods of communication, such as direct eye contact, hand signals, and/or verbal communication.</p> <p><b>Personal Protective Equipment:</b> Hard hat; steel-toe work boots; high-visibility safety vest or outer garment; United States Coast Guard–approved personal floatation device such as a life jacket; safety glasses with side shields; nitrile gloves; and hearing protection, i.e., ear plugs or ear muffs.</p>

## Job Hazard Analysis (JHA)

Task/Operation: Working over Water from Boats and Docks		
<b>Project Number:</b> 0785.13.01	<b>Location/Site where Task/Operation Performed:</b> Willamette River Mile 16.6 to 28.4 Upriver Reach, Oregon	
<b>Date Prepared:</b> 12/7/2020	<b>Employee Preparing this JHA:</b> Meaghan Pollock	
<b>Date Reviewed:</b> 12/11/2020	<b>Employee Reviewing and Certifying this JHA:</b> Josh Elliott	
Job/Task Description		
Employees will conduct work such as sediment sampling from a boat. This will require occasional work in close proximity to water.		
Physical Hazards		
Hazard/Risk	Source of Hazard/Risk	Hazard/Risk Mitigation
Drowning	Entering body of water where work is being conducted.	Wear a US Coast Guard-approved Type III personal floatation device.
Vehicle/vessel accident	Transportation and launching of the vessel.	The chosen subcontractor shall have the proper licensure and experience to transport the trailered vessel to and from the boat launch. The launch area will be cleared of all non-essential personnel.
Loading/Offloading	Pinch points.	Wear protective gloves whenever possible. Avoid placing hands between objects.
Injuries caused by improper lifting	Equipment, core sampler, sample coolers.	Use proper bending/lifting techniques by bending and lifting with legs and not with back. Do not twist at the waist when turning the core sampler.
Slips, trips, and falls	Wet or slick surfaces encountered on boat or during loading/offloading.	Vessel crews and field personnel shall keep the working area free of unnecessary obstacles and periodically remove any accumulated sediment or mud from the working surface. Field personnel are to take extra precaution when loading/offloading equipment and supplies from the vessel at the boat launch, where walking surfaces may be uneven and/ or slick.
Fire	Electrical equipment, generators, motors.	No smoking or open flame is allowed on the vessel at any time. At least one B-1 Type, USCG-approved, handheld, portable fire extinguisher will be on the boat, readily available for use.



Task/Operation: Working over Water from Boats and Docks		
Fuel spills	Fueling.	Boat fuel (gasoline) will be contained in engine manufacturer-approved containers that supply fuel to the engine via neoprene fuel lines. No fuel transfers between containers are to be conducted aboard the boat.
Heat/cold/sunburn	Weather.	Wear sunscreen on exposed skin. Stop work and move to a shaded area to drink water if there are symptoms of heat stress. During cold conditions, wear adequate clothing to reduce the potential for hypothermia. Have rain gear and a change of dry clothes available in the event of a heavy rain event.
Biological and Chemical Hazards		
Hazard/Risk	Source of Hazard/Risk	Hazard/Risk Mitigation
COVID-19	The novel coronavirus disease 2019 (COVID-19) is a respiratory illness that can spread from person to person. The SARS-CoV-2 virus, which causes COVID-19, is thought to spread primarily between and among people who are in close contact with one another (within approximately 6 feet) through respiratory droplets produced when an infected person coughs or sneezes. Activities conducted on the vessel will require working in close proximity to other personnel.	Wear facial coverings at all times. Maintain a minimum of 6 feet from other personnel and, where social distancing cannot be maintained, wear a disposable N95 mask or respirator with N95 cartridge. If respirators are used, they should be cleaned and disinfected between uses with EPA-registered cleaners for COVID-19.
Additional Control Measures and Guidance		
<b>Engineering Controls:</b> No engineering controls specified.		
<b>General Safe-Work Practices and Guidance:</b> Personnel should stay upwind and out of the impact area of the heavy equipment, if feasible. Work conducted in the impact area must be coordinated with the equipment operator using pre-established methods of communication, such as direct eye contact, hand signals, and/or verbal communication.		
<b>Personal Protective Equipment:</b> United States Coast Guard-approved personal floatation device such as a life jacket. Cloth face coverings or, where social distancing cannot be maintained, disposable N95 mask or respirator with N95 cartridge.		

# APPENDIX B

## SPILL NOTIFICATION FORM



## Spill Notification Form

Part A: Basic Spill Data		
<b>Facility Name and Location:</b> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; margin-bottom: 5px; text-align: right;">Street</div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div>	<b>Owner/Company Name:</b> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="border-bottom: 1px solid black; margin-bottom: 5px; text-align: right;">Street</div> <div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div>	
<b>Telephone:</b> Facility: <div style="border-bottom: 1px solid black; width: 100%;"></div> 24 hr.: <div style="border-bottom: 1px solid black; width: 100%;"></div>		
<b>Type of Spilled Substance:</b>	<b>Notification Person:</b>	
<b>Quantity Released:</b>	<b>Spill Date and Time (start):</b>	
<b>Spill Date and Time (stop):</b>	<b>Discovery Date and Time:</b>	
<b>Spill Cause and Location:</b> <div style="border-bottom: 1px solid black; height: 20px;"></div>		
<b>Release to:</b> <input type="checkbox"/> air <input type="checkbox"/> water <input type="checkbox"/> ocean <input type="checkbox"/> well <input type="checkbox"/> soil <input type="checkbox"/> sewer <input type="checkbox"/> containment <input type="checkbox"/> other <div style="border-bottom: 1px solid black; width: 150px;"></div>		
<b>Nature of spill and any environmental or health effects:</b> <input type="checkbox"/> Injuries <input type="checkbox"/> Fatalities <div style="border-bottom: 1px solid black; height: 20px;"></div>		
<b>Corrective action and countermeasures taken:</b> <div style="border-bottom: 1px solid black; height: 20px;"></div>		
<b>Additional preventive measures taken or contemplated to minimize possibility of recurrence:</b> <div style="border-bottom: 1px solid black; height: 20px;"></div>		
Part B: Notification Checklist		
<b>Spill Type</b>	<b>Notification Date and Time</b>	<b>Name of Person Who Received Call</b>
<b>Spill is &gt; 42 gallons or is &lt; 42 gallons and cleanup is not complete within 24 hours:</b>		
DEQ Emergency Response 1-503-229-6931 or 1-503-229-5153		
Oregon Emergency Response System 1-800-452-0311		
National Response Center 1-800-424-8802		

Send a copy of this form to the DEQ and MFA project manager.

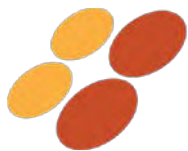
This form shall be maintained by the party responsible for the spill for at least five years.

# APPENDIX C

## INCIDENT REPORT FORM







# MAUL FOSTER & ALONGI, INC. HEALTH & SAFETY INCIDENT REPORT

THIS REPORT MUST BE COMPLETED IN FULL AND SUBMITTED WITHIN 24  
HOURS TO THE MFA HEALTH AND SAFETY COORDINATOR

Project Name: \_\_\_\_\_

Project Number: \_\_\_\_\_

Date of Incident: \_\_\_\_\_

Time of Incident: \_\_\_\_\_

Location: \_\_\_\_\_

Type of Incident (Check all applicable items)

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Illness         | <input type="checkbox"/> Health & Safety Infraction | <input type="checkbox"/> Vehicular Accident |
| <input type="checkbox"/> Injury          | <input type="checkbox"/> Fire, Explosion, Flash     | <input type="checkbox"/> Electric Shock     |
| <input type="checkbox"/> Property Damage | <input type="checkbox"/> Unexpected Exposure        | <input type="checkbox"/> Near Miss          |
| <input type="checkbox"/> Spill           | <input type="checkbox"/> Other (describe): _____    |   |

## DESCRIPTION OF INCIDENT

Describe what happened and the possible cause of the incident. If reporting a spill, include the quantity or estimated quantity. Identify individual(s) involved, witnesses, and their affiliations. Describe emergency or corrective action taken. Attach additional sheets, drawings, or photographs as needed.

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## INCIDENT REPORTER

_____ PRINT NAME	_____ SIGNATURE	_____ DATE
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Site Safety Officer must deliver this report to the Health & Safety Coordinator within 24 hours. Reviewed by:

_____ MFA Health & Safety Coordinator PRINT NAME	_____ MFA Health & Safety Coordinator SIGNATURE	_____ DATE
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# APPENDIX D

## TAILGATE SAFETY MEETING CHECKLIST



# Tailgate Safety Meeting Checklist



MAUL FOSTER ALONGI

Client Name:		
Project No.:		
Communicated By:		
Date:		
Yes	NA	Information Reviewed
<input type="checkbox"/>	<input type="checkbox"/>	Emergency Procedures and Site Evacuation Routes
<input type="checkbox"/>	<input type="checkbox"/>	Route to Hospital
<input type="checkbox"/>	<input type="checkbox"/>	HASP Review and Location
<input type="checkbox"/>	<input type="checkbox"/>	Key Project Personnel
<input type="checkbox"/>	<input type="checkbox"/>	Emergency Phone Numbers
<input type="checkbox"/>	<input type="checkbox"/>	Stop-Work Authority
<input type="checkbox"/>	<input type="checkbox"/>	General Site Description/History and Chemical Hazards
<input type="checkbox"/>	<input type="checkbox"/>	For Active Sites - Site Activities and Vehicular/Equipment Traffic
<input type="checkbox"/>	<input type="checkbox"/>	Site-Specific Physical Hazards
<input type="checkbox"/>	<input type="checkbox"/>	Required Personal Protective Equipment
<input type="checkbox"/>	<input type="checkbox"/>	Available Safety Equipment and Location
<input type="checkbox"/>	<input type="checkbox"/>	Daily Scope of Work (Reference JHAs as applicable)
<input type="checkbox"/>	<input type="checkbox"/>	Decontamination Procedures
<input type="checkbox"/>	<input type="checkbox"/>	Identify Work Zones, Exclusion Zones, and Decontamination Zones
<input type="checkbox"/>	<input type="checkbox"/>	Hazardous Atmospheres
<input type="checkbox"/>	<input type="checkbox"/>	Air Monitoring Equipment and Procedures
<input type="checkbox"/>	<input type="checkbox"/>	Identify Potential Site-Specific Slip, Trip, and Fall Hazards
<input type="checkbox"/>	<input type="checkbox"/>	Dust and Vapor Control
<input type="checkbox"/>	<input type="checkbox"/>	Confined Space(s)
<input type="checkbox"/>	<input type="checkbox"/>	Open Pits and Excavation
<input type="checkbox"/>	<input type="checkbox"/>	Extreme Temperatures
<input type="checkbox"/>	<input type="checkbox"/>	Incident Reporting
<input type="checkbox"/>	<input type="checkbox"/>	Other: _____
Suggestions to Improve HS Practices		
Attendees		
Name	Signature	Company
1)		
2)		
3)		
4)		
5)		
6)		
7)		
8)		

# APPENDIX E

## COVID-19 EXPOSURE CONTROL, MITIGATION, AND RECOVERY PLAN



## HASP/SAFE WORK PLAN SUPPLEMENT: COVID-19 EXPOSURE CONTROL, MITIGATION, AND RECOVERY PLAN

### BACKGROUND

The novel coronavirus disease 2019 (COVID-19) is a respiratory illness that can spread from person to person. The SARS-CoV-2 virus, which causes COVID-19, is thought to spread primarily between and among people who are in close contact with one another (within approximately 6 feet) through respiratory droplets produced when an infected person coughs or sneezes. There is evidence that smaller respiratory droplets that can remain suspended may increase the risk of transmission. It also may be possible to contract COVID-19 by touching a virus-impacted surface or object and then touching one's own mouth, nose, and/or eyes. People with COVID-19 have reported a wide range of symptoms—from mild symptoms to severe illness. Symptoms may appear **two to 14 days after exposure to the virus**. People with the following symptoms or combinations of these symptoms may have COVID-19:

- Fever or chills
- Cough
- Shortness of breath
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

The virus may also lead to pneumonia, multiorgan failure, and/or death.

### COVID-19 POLICIES AND PROCEDURES

To help prevent the spread of COVID-19 and comply with measures issued by public health agencies and government officials, Maul Foster & Alongi, Inc. (MFA) is implementing the following policies and procedures.

#### General

- Postpone nonessential work until further notice.
- All fieldwork deemed to be essential must be coordinated with and approved by MFA's social distancing point of contact.
- Employees are prohibited from conducting fieldwork if they:
  - Have returned from international travel in the last 14 days;
  - Are experiencing symptoms consistent with COVID-19 based on current Centers for Disease Control and Prevention (CDC) guidance;

- Have had close contact with someone diagnosed with COVID-19 within the past 14 days of planned fieldwork. “Close contact” means having been within 6 feet of someone for an extended time and/or being exposed to their cough or sneeze;
- Have been advised by a health care provider to self-quarantine and the self-quarantine has not yet been completed; or
- In the past 14 days have cared for an individual who is subject to a quarantine/isolation order related to COVID-19.
- Coordinate with MFA’s social distancing point of contact to request access to warehouses for field equipment and supplies and/or to request access to enter an MFA office.
- Call analytical labs before collecting field samples to be sure that the labs are open and able to process your samples.
- Be mindful that deliveries, including sample bottles and lab pickups, will have to be rerouted and that extra coordination with all subcontractors and vendors is appropriate.
- Some MFA personnel, e.g., those conducting essential fieldwork in Washington, may need to carry an MFA-issued letter explaining that they are essential employees. Discuss the need for a letter with MFA’s social distancing point of contact.

## Social Distancing

- Maintain social distancing protocols (i.e., at least 6 feet of distance from other persons) during approved work and related travel, preparation, and demobilization.
- To ensure social distancing, MFA personnel cannot drive or ride in a vehicle with another person.
- Work-related air travel is not allowed until further notice.
- Only single-occupancy rooms are allowed for work-related hotels / lodging. While at hotels, disinfect your own room with disposable bleach wipes, and use the NO HOUSEKEEPING sign. Keep the number of people coming in and out of your room to a minimum.

## Hygiene and Sanitation

- **Wash your hands frequently.** Use soap and water for at least 20 seconds, getting the whole hand—including the back of the hand, between your fingers, and under your nails. Alcohol-based hand sanitizers with more than 60 percent ethanol or 70 percent isopropanol can also be used but they do not replace the water requirement.
  - If handwashing facilities are not readily available on or near the site, then project managers will arrange for a portable handwashing station.
  - Portable handwashing stations may be used only for washing hands, i.e., no equipment decontamination or disposal of materials. Buckets with tight-fitting lids will be provided [for use] during transport. Spent handwashing water may be discharged into a sanitary drain, e.g., the MFA warehouse sink, with approval from the project manager.

- **Cover your nose and mouth with a tissue when you cough or sneeze** and then place the used tissue into a wastebasket. If you don't have a tissue, cough or sneeze into your upper sleeve or elbow, not your hands. Remember to wash your hands after coughing or sneezing. Avoid touching your eyes, nose, and mouth with unwashed hands, and avoid touching other surfaces with unwashed hands after touching these areas of your face.
- **Routinely clean frequently touched surfaces.** Use disposable disinfectant wipes, e.g., Clorox® bleach wipes, to wipe down touched surfaces in field vehicles and the equipment warehouse before and after entry.

## Personal Protective Equipment

- Wear eye protection and gloves when conducting activities on site. The type of glove worn should be appropriate to the task. If gloves are not typically required for the task, then any type of glove is acceptable, including nitrile gloves.
- Cloth face coverings or respiratory protection is required during work on construction sites in Washington State. See "Frequently Asked Question" No. 2 for more information about cloth face coverings.

## Symptom Monitoring

- Stay home if you have COVID-19 symptoms or other illnesses. If you start experiencing COVID-19 symptoms in the field, leave the site as soon as practicable, avoid contact with others, and notify MFA's social distancing point of contact and/or HR.
- MFA personnel should take their temperature before their work begins each day. An employee whose temperature is 100.4°F or higher should immediately notify the site safety officer (SSO) or designee and should stay home. An employee whose temperature reaches 100.4°F or higher during the workday should cease work, notify the SSO or designee, and return home.
- The SSO should ask each person before the start of each workday if they have reviewed and are complying with this Safe Work Plan and are fit for work (e.g., no fever or symptoms/combination of symptoms consistent with COVID as described at the beginning of this document).
- If in the field, MFA personnel should report to the SSO or designee if they develop a fever or symptoms/combination of symptoms consistent with COVID-19 as described at the beginning of this document. If symptoms develop during work, the person should be immediately sent home. If symptoms develop while the person is not working, the person should not return to work until they have been evaluated by a healthcare provider.
- Consistent with CDC guidance, MFA may not treat every employee with a single, nonspecific symptom (e.g., a headache) as a suspected case of COVID-19.<sup>1</sup> MFA, in consultation with the employee, will exercise discretion based on the perceived likelihood that the symptom or symptoms are due to other reasons, such as allergies.<sup>2</sup>

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<sup>1</sup> <https://www.cdc.gov/coronavirus/2019-ncov/community/general-business-faq.html>

<sup>2</sup> <https://www.aaaai.org/Aaaai/media/MediaLibrary/Images/Promos/Coronavirus-Symptoms.pdf>

## Incident Reporting, Exposure Response Procedures, Decontamination Procedures, and Recovery Plan

- A person who reports feeling sick should be sent home. See “Frequently Asked Questions” No. 4.
- HR will coordinate with management to ensure that the area where the person worked is promptly cordoned off and disinfected.
- Promptly notify HR or a coach if you experience symptoms consistent with COVID-19. HR will inform you of protections available to you and ask what worksites you have frequented and any individuals you may have had close contact with at those worksites.
- HR will coordinate communications with people who may have had close contact with a confirmed or probable case of COVID-19.
- The decision to conduct COVID-19 testing should be guided by advice from state and local health departments and healthcare providers.

## COVID-19 Safety Training and Information

- Conduct or participate in a tailgate meeting (maintaining social distance) at the start of the workday and at least weekly to explain the exposure-control measures.
- The SSO or designee should record the attendance so attendees do not need to pass along a sign-in sheet.
- These procedures must be posted in a visible location on construction sites in Washington. Posting these procedures is encouraged for project sites beyond Washington.

## FREQUENTLY ASKED QUESTIONS

### 1. Should I wear a respirator?

The short answer is “no.” N95 respirators are in short supply, so public health experts and government agencies suggest that we reserve them for healthcare providers. Respirators with exhalation valves, such as half-face respirators typically used by MFA personnel, allow respiratory droplets to escape, so they would not protect people around you if you were infected.

### 2. Should I wear a cloth face covering?

Face coverings prevent the person wearing the mask from spreading respiratory droplets when talking, sneezing, or coughing. If everyone wears a face covering outside their homes, the risk of exposure to SARS-CoV-2 can be reduced for the community. If you wear a face covering, you are potentially protecting others from your own secretions, and another person’s face covering is potentially protecting you from their secretions.

Face coverings are required by most public health authorities, although specific requirements may differ by area.

***Staying apart from others is the best protection against COVID-19. The most important ways of preventing COVID-19 continue to be frequent handwashing, avoiding touching your face, staying away from ill people, staying home, and avoiding all nonessential activities and***



**contact with others. A face covering does not replace the need to follow these important precautions to prevent illness!**

When selecting a cloth face covering, consider designs that:

- Fit snugly but comfortably against the side of the face.
- Are secured with ties or ear loops.
- Include multiple layers of fabric.
- Avoid materials such as vacuum bags or furnace filters, as the manufacturing process may have resulted in loose fibers that could be inhaled.
- Allow for breathing without restriction.
- Use materials that are disposable or that can be laundered and machine dried without damage or change to shape.

Avoid touching your face as much as possible. Keep the covering clean. Clean hands with soap and water or alcohol-based hand sanitizer immediately before putting on, after touching or adjusting, and after removing the cloth face covering. Do not share it with anyone else unless it is washed and dried first. You should be the only person handling your covering. Laundry instructions will depend on the cloth used to make the face covering. In general, cloth face coverings should be washed regularly (e.g., daily and whenever soiled) using water and a mild detergent, dried completely in a hot dryer, and stored in a clean container or bag.

### **3. What should I do if I think I've come into contact with a person who has COVID-19?**

It is frightening to think that you've been exposed, so it's important to make decisions based on your actual risk. The CDC has issued [guidance](#) to help public health authorities assess and manage the risk of potential exposure to COVID-19.

For example, if your exposure was to a person in the same building but not within 6 feet for a prolonged time, and you had no direct contact, such as being coughed on, the CDC recommends that you watch for fever, cough, or difficulty breathing and follow [CDC guidance](#) if symptoms develop.

### **4. What should I do if I am sick with COVID-19 or suspect that I am infected with the virus that causes COVID-19?**

You should stay home except to get medical care. Call ahead before visiting your doctor to say that you have been or are being evaluated for COVID-19.

Try to separate yourself from other people and animals in your home. You should wear a facemask when you are around other people or pets (such as sharing a room or vehicle) and before you enter a healthcare provider's office. If you are not able to wear a facemask (for example, because it causes trouble breathing), then people who live with you should not stay in the same room with you, or they should wear a facemask if they enter your room.

Cover your nose and mouth during coughs and sneezes, wash your hands often, clean surfaces frequently, and monitor your symptoms.

Seek prompt medical attention if your illness is worsening, e.g., breathing is becoming increasingly difficult. Put on a facemask before you enter the medical facility to help the healthcare provider's office protect other people in the office or waiting room from infection or exposure. Most medical offices have masks available at their entrances for this reason.

If you have a medical emergency and need to call 911, notify the dispatch personnel that you have been or are being evaluated for COVID-19. If possible, put on a facemask before emergency medical services arrive.

Patients with confirmed COVID-19 should remain under home isolation precautions until their doctor and the state and local health departments determine that the risk of secondary transmission to others is low. For reference, the Clark County Health Department suggests that people who develop COVID-19 symptoms after close contact with COVID-19 patients discontinue home isolation under the following conditions:

- At least three days (72 hours) have passed since recovery, which is defined as resolution of fever (without the use of fever-reducing medications) and improvement in respiratory symptoms (e.g., cough, shortness of breath); AND,
- At least ten days have passed since symptoms first appeared.

## 5. Where can I get more information?

The following list provides some helpful links to reliable information:

1. CDC: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
2. World Health Organization: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
3. Washington Department of Health: <https://www.doh.wa.gov/Coronavirus/Workplace>
4. Oregon Health Authority: <https://www.oregon.gov/oha/PH/DISEASES/CONDITIONS/DISEASESAZ/Pages/emerging-respiratory-infections.aspx>
5. University of Minnesota Center for Infectious Disease Research and Policy: <http://www.cidrap.umn.edu/covid-19/information-employers/business>

### REVISION HISTORY

*This document was originally issued as Revision 0. It has been revised as follows:*

Date	Revision Details	Revised By:	Revision
4/9/2020	Updated addendum to include frequently asked questions section and information about cloth face coverings.	WHB	1

5/7/2020	Updated to address Washington's construction safety requirements, new COVID-19 symptoms, and information about cloth face coverings. This included the addition of information about handwashing, temperature/symptom screening, tailgate meetings, and the requirement to wear cloth face coverings.	WHB	2
5/21/2020	Removed reference to K. Lombardi and A. Clary. Updated to reference the social distancing point of contact, the health and safety coordinator (E. Curtis).	EMC	3
7/22/2020	Updated symptoms to be consistent with CDC guidance. Updated response to question #2 regarding face coverings (removed references to outdated rules). Updated symptom monitoring guidance to make it consistent with MFA's COVID plan. Clarified that out-of-office meetings should be approved by HSC. Added revision history.	WHB	4

## PROJECT-SPECIFIC COVID-19 PRECAUTIONS

Designated COVID-19 Supervisor / Site Safety Officer: Carolyn Wyse and Meaghan Pollock

1. Each morning before beginning work, all on-board crew members and field personnel will perform a COVID-19 symptom check. Any team member with COVID-19-like symptoms, as described in the HASP/Safe Work Plan Supplement: Covid-19 Exposure Control, Mitigation, and Recovery Plan, will not be permitted to perform fieldwork or allowed on site. They will inform other team members, the designated Site Safety Officer, and human resources.
2. If on-board crew members or field personnel begin to experience COVID-19 symptoms while in the field, the boat will immediately return to the boat launch and vessel operations will cease. All crew members will self-isolate and will not return to work until authorized by HR. The boat will not re-launch until it is fully disinfected. A replacement crew will be staffed, if necessary.
3. Crew members will practice social distancing to the extent practicable while aboard the vessel, staying aware of sampling hazards (i.e., grab sampler deployment and movement of the A-frame).
4. All crew members will wear cloth face coverings, disposable surgical masks, or other respiratory protection (i.e. N95 mask) at all times. An N95 mask is required when social distancing cannot be maintained.
5. Any shared touch surfaces will be disinfected with disposable disinfectant wipes before and after use.
6. Respirators, gloves, and other PPE should not be shared if possible. If respirators are used, they should be cleaned and disinfected between uses with EPA-registered cleaners for COVID-19.
7. Nitrile gloves will be worn at all times and frequently changed by all team members.
8. Team members will minimize touching their faces.
9. A mobile hand-washing station and/or hand sanitizer will be available for all vessel crew members and field personnel.
10. Only one person should mobilize and demobilize field equipment.
11. Field personnel are not to ride in the same vehicle.
12. Coolers small enough to allow a single person to transport them safely should be used.